Impact of Chemistry
Fall 2012

Lecturer: Heinz D. Roth
Lectures: Mon, Thu
Office Hours: Thu 14:00 – 17:00
Textbook
"Chemistry in Context", 7th ed. by Catherine H. Middlecamp et al.
ISBN: 978-0-07-337566-3 (soft cover); 0-07-337566-7 (hard cover)

Grading
Based mostly on individual performance, to a lesser extent on group activities.
Exams (3 @ 100) 300
Case Studies (6 @ 15) 90
Problem Sets (6 @ 10) 60
Attendance 50
Total 500

Topic 1: The Ozone Layer (Sept. 6, 10, 13, 17, 20)
Readings for Topic 1: Ch. 0, Ch. 1, Sect 1.5-1.14; Ch. 2
Problem Set 1: Due date Sept. 20:
Ch. 1 problems 13, 15, 16, 18, 19, 21, 22, 23, 25
Ch. 2 problems 2, 4, 5, 7, 8, 9, 10, 11 - 18, 21 - 23, 26, 28, 31, 35
Session 1. Sept. 6. Course overview, assignment to groups, Ch. 1 student surveys.
Session 2. Sept. 10. Ch. 2 lecture/discussion.
Session 3. Sept. 13. Writing group contracts, Ch. 2 lecture/discussion.
Session 5. Sept. 20. Lecture/discussion; hand in Problem Set 1 & position papers.
Case Study 1. Protecting the Ozone Layer.

Topic 2: Global Climate (Sept. 24, 27, Oct 1, Oct. 4)
Readings for Topic 2: Ch. 3.
Problem Set 2: Due date Oct. 4:
Ch. 3 problems 2, 3 - 5, 6, 7, 9, 11-19, 22, 24, 25, 27, 29, 33, 36 – 38, 40, 41, 49, 55.
Session 1. Sept. 24. Ch. 3 lecture/discussion.
Session 2. Sept. 27. Ch. 3 lecture/discussion; hand in revised group contracts.
Case Study 2. World Response to Global Warming.

EXAM I. Oct. 8.

Readings for Topic 3: Ch. 4, Ch. 7, Ch. 8,
Problem Set 3: Due date Oct. 25
Ch. 4 problems 1, 2, 5, 6, 7, 12, 13, 14, 17, 19, 20, 23, 25, 29, 32, 35, 43.
Ch. 7 problems 1, 3, 4, 5, 7, 10, 11, 14, 16, 18, 21, 25, 28, 31, 39, 56.
Ch. 8 problems 1, 2, 3, 5, 7, 9, 13, 17, 20, 32 - 34, 42, 44, 46.

Session 1. Oct. 10. Ch. 4 lecture/discussion.
Session 2. Oct. 15. Ch. 4, 7 lecture/discussion.
Session 3. Oct. 18. Ch. 7 lecture/discussion.
Session 4. Oct. 22. Ch. 8 Lecture/discussion.

Case Study 3. The Energy Crisis

**Topic 4: Polymers and Plastics (Oct. 29, Nov. 1, 5, 8)**

Readings for Topic 4: Ch. 9.

**Problem Set 4:** Due date Nov. 5:
- Ch. 9 problems 1, 5, 7, 9, 10, 12, 13, 14, 17, 21, 22 - 24, 27, 28, 30, 34, 39, 40.

Session 1. Oct. 29 Ch. 9 lecture/discussion.
Session 2. Nov. 1. Ch. 9 lecture/discussion.
Session 3. Nov. 5. Ch. 9 lecture/discussion;
Session 4. Nov. 8. Ch. 9 lecture/discussion; hand in problem set 4 & position papers.

Case Study 4.

**EXAM II. Nov. 12.**

**Topic 5: Designing Drugs (Nov. 15, 19, 20, 26)**

Readings for Topic 5: Ch. 10.

**Problem Set 5:** Due date Nov. 26:
- Ch. 12 problems, 5-9, 11, 13, 14, 15, 19, 22-25, 29, 31, 35, 38, 40.

Session 1. Nov. 15. Ch. 12 lecture/discussion.
Session 3. Nov. 20. Ch. 12 lecture/discussion.

Case Study 5. Legalization of Marijuana.

**Topic 6: Genetics and Heredity (Nov. 29, Dec 3, 6, 10)**

Readings for Topic 6: Ch. 12.

**Problem Set 6:** Due date Dec. 6:
- Ch. 12 problems 1, 2, 4, 5, 9, 12, 14, 17, 21, 24, 26, 28, 30, 34, 44.

Session 2. Dec. 3. Ch. 12 lecture/discussion.

Case Study 6. The Ethics of Embryonic Stem Cell Research.

**EXAM III. Dec. 18, 1:00 PM.**